Office of the City Auditor

Computer Asset Management
Report No. 0407D

April 19, 2005

Controls are sufficient to ensure that information systems assets, considered part of the City's Network, will be listed and tracked as part of the Information Systems Department computer asset list. Improvements are needed to ensure compliance with the requirement for an annual inventory.

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April 19, 2005

To the Most Honorable Mary Manross, Mayor
and Members of the Scottsdale City Council

Transmitted herewith is Audit Report No. 0407D, "Computer Asset Management." Staff in Information Systems and Purchasing were extremely cooperative while completing this audit and we would like to extend our thanks for the assistance provided.

If you need additional information or have any questions, please contact me at 480-312-7756.

Respectfully submitted,

Cheryl Lee Barcala

Cheryl Barcala, CPA, CIA, CFE, CGFM, CISA, CISSP
City Auditor

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EXECUTIVE SUMMARY

An audit of the City's asset management system was included on the 2002/2003 Audit Plan for our Office and was reaffirmed by the audit committee in December 2004. This report outlines the results of work completed to assess controls in place to safeguard the City's information systems assets.

We concluded that controls are sufficient to provide reasonable assurance that a current asset list will be maintained for the equipment considered to be part of the City’s information system (i.e., the Network). Procedures do not, however, require an inventory of all computer-related equipment. As a result, the list maintained by the Information Systems Department (Information Systems) and the composite valuation reported on City financial records does not reflect the entire population of information systems assets.

We also concluded that Information Systems is partially complying with the requirement in Administrative Regulation (AR) 226 for a full physical inventory annually. The inventory for FY 04/05 was started in November 2004 and as of the date of this work; only 85 percent of the inventory had been verified. Moreover, under current practice, certain pieces of equipment will only be “verified” by receipt of an e-mail confirmation from the assigned work area or user to the effect that the equipment is still present.

Finally, controls are sufficient to ensure that surplus equipment is tracked prior to release to the Purchasing Division for disposal. Procedures, however, are not sufficient to allow verification that equipment sent for disposal is actually sold. Documentation of the disposal consists only of a count and the type of equipment sold. There is no reconciliation of the count of items sent by Information Systems staff for disposal and the number of items ultimately sold.

To this end, our recommendations build on the existing structure to create a more effective and efficient asset management program for the City's information systems. The Action Plan sets out management's proposed actions and our recommendations. Management's formal response can be found in Appendix A of this Report.

ACTION PLAN

No.	Recommendations and Management Response
	The Chief Information Officer should:
1	Clarify the language in existing ARs to ensure that requirements are consistent.
	Management Response: We agree with this recommendation. The responsible party for AR226 is Financial Services. Since this is the principal policy, all internal Information Systems policies will be reviewed and if not in compliance with AR226, will be rewritten so that the two sets of policies are consistent. **Responsible Party:** Jennifer Jensen **Completed By:** July 2005
2	Document procedures for tagging computer related assets.
	Management Response: We agree with this recommendation. Procedures for tagging computer related assets will be documented. **Responsible Party:** Jennifer Jensen **Completed By:** July 2005
3	Clarify the instructions on when the inventory database will be updated as a result of the completion of a work order.
	Management Response: We agree with this recommendation. IS will review the scanning/updating procedures, revise the criteria for scanning when completing a work order, and communicate the changes in policy and procedures to the appropriate staff members. **Responsible Party:** Joe Stowell **Completed By:** July 2005
4	Require all computer related equipment, purchased with City funds or on behalf of the City, to be reviewed for concurrence, inventoried by Information Systems staff, and included on the inventory database for annual verification.
	Management Response: We agree with this recommendation. Purchasing currently requires IS concurrence on all computer related purchases. Currently, all purchasing related training, including Purchasing Card training, includes this requirement. We will remind Purchasing staff of the importance of receiving IS concurrence prior to the purchase of an item. **Responsible Party:** Monroe Warren **Completed By:** July 2005

No.	Recommendations and Management Response
5	Enforce the requirement to scan equipment when a work order is completed to update the inventory location and other information that will help complete the physical inventory.
	Management Response: We agree with this recommendation. The procedure for scanning and applying updates to the inventory database will be reviewed to determine what automated controls and reporting capability can be established to monitor the scanning/updating process. The scanning requirement will be included in the KRAs for the Technicians and Sr. Technicians. The cycle time required for the new KRAs to be included in all of the technicians' reviews will be one year. **Responsible Party:** Joe Stowell **Completed By:** July 2005
6	Establish a strict timeline for the physical inventory to be completed.
	Management Response: We agree with this recommendation. Information Systems management will work in concert with Financial Services to establish a timeline for the physical verification of assets. **Responsible Party:** Joe Stowell **Completed By:** July 2005
7	Cease the practice of using e-mail to verify the ongoing existence of equipment. For areas such as the Police Department, develop procedures that allow Police technicians to scan the equipment on behalf of Information Systems.
	Management Response: We agree in part with this recommendation. Information Systems will develop procedures to permit selected Tech Partners to help with the verification of assets by allowing them to scan their assets. E-mail will still be used to verify existence for all equipment located in private homes due to the cost vs. benefit of performing these scans. **Responsible Party:** Jennifer Jensen **Completed By:** July 2005
8	Ensure that written procedures for compiling the composite valuation for the financial records, developed prior to the completion of the audit, are kept current and that all needed adjustments are reflected on the inventory database.
	Management Response: We agree with this recommendation. Written procedure for compiling the composite valuation for the financial records as well as the needed adjustments in the inventory database were written in March 2005 and will be reviewed annually. **Responsible Party:** Jennifer Jensen **Completed By:** March 2005

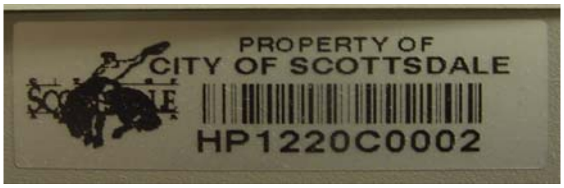
No.	Recommendations and Management Response
9	Maintain a control list of assets, by identifying serial number, for items placed in the cage for disposal. Reconcile the count on this list to the count in the cage when determining the number of items to be disposed of.
	Management Response: We agree with this recommendation. Develop a report from the ISIS database that lists the serial numbers of all surplused items. Reconcile the report to the count in the cage when determining what items will be sold. **Responsible Party:** Joe Stowell/Phil Murphy **Completed By:** December 2005
10	Require Purchasing Division staff, when adding items to the cage, to add the item to the control list by identifying serial number and submitting area to retain a complete record of what was sold. Provide this updated control list to Information Systems staff for retention and use, if necessary, when searching for missing equipment.
	Management Response: We agree in part with this recommendation. The Warehouse will not add items to the cage until the Warehouse has taken complete control of all items in the cage. If practical and material, the Warehouse will add the item by serial number to the inventory list provided by IS. If not practical or material, the Warehouse will add an item count to the inventory list provided by IS. When the computer related equipment is sold in an Offer to Purchase, the reconciliation of the items sold will be by a physical count and not a serial number reconciliation. **Responsible Party:** Phil Murphy **Completed By:** July 2005

BACKGROUND

Information Systems maintains an inventory[1] of technology related components. This asset list includes network equipment, servers, monitors, CPUs, printers, personal digital assistants (PDAs), telephones, and other miscellaneous items. Current practice does not inventory separate components of a computer such as memory or drives (hard, floppy, or otherwise), speakers, keyboards, or mice. Past practice has varied, though, and the asset list includes peripherals such as external compact disc (CD) drives and digital cameras that were tagged and inventoried in prior years.

The Process Used to Track Items

To track inventoried items, a unique identification number is assigned and an asset tag with this number is attached to the piece of equipment. The numbering scheme is an eleven-character code with the first seven characters providing information about the type of component. For example, a code of CISCORT was developed to tag CISCO routers and HPDJ is used to identify Hewlett Packard Desk Jet printers. The last four character spaces are used to reflect a numeric sequence for the items within that component category. The picture below shows what a City inventory tag looks like. The code would tell someone familiar with the process that the item is a Hewlett Packard model 1220 color printer. According to the sequence, this item was the second one received by the City.



The Information Systems Buyer develops the text of the information to be printed on the asset tag using an application known as "Bartender." Tags are printed in numeric sequence based on the number requested. When equipment is received, the Information Systems Buyer attaches an asset tag to the product packaging and records information about the new asset using a database application known as ISIS. Information such as identification number, type, purchase order number, cost, and date received is included. The database also has fields for additional information such as status, comments, location of the item, the department assigned, and cost center. Using a scanner, the barcode on the asset tag provides an easy way to capture information about the piece of equipment during repair or when the annual inventory is completed.

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[1] In this context, inventory means a database of computer assets.

Maintaining the Database

ISIS is standalone and does not link with the work order system used by Information Systems staff to schedule installations, moves, or repairs. To track the status of the inventory, Information Systems technicians scan the asset tag when completing work orders and the information from the scanner updates the information on ISIS.

When equipment is declared surplus, the item is flagged in ISIS by changing the location and cost center fields. Information Systems staff scrubs data from any storage device, removes the asset tag (the tag is kept as verification that the piece of equipment was still in the possession of the City when the decision was made to dispose of the equipment), and places the item in a locked storage area. When ready for disposal, the status in ISIS is changed to "SURPLUS." If Purchasing receives a component for disposal that still has the inventory tag attached, the item will be sent to Information Systems to ensure that the item was flagged by Information Systems as appropriate for disposal.

When equipment is lost or stolen, the status in ISIS is changed to “REMOVED.” According to the Information Systems Departmental Advisor, this action will only be taken if a Police Report is available to support the conclusion that the item was stolen. If an item simply cannot be found during a physical verification, the status in the inventory system will not be updated.

Terminology used for the status of an asset may mean different things. The term “VERIFIED BARCODE” may mean that the Information Systems technician verified the tag as part of a physical verification or physical Inventory. Similarly, the term SURPLUSED might reflect that the item was sent for disposal or it might signify that the piece of equipment was returned to the vendor for credit or replacement, however, there is usually a comment to explain returns.

ISIS presents a historical record of assets from acquisition through disposal because current practice does not archive this information. There was a period of time, however, that this practice was different.

Limiting user rights protects the integrity of ISIS. Only two users have rights to create an asset record and only the database administrator can delete records. Information Systems technicians can only submit modifications for information such as change in location or status. The integrity is also protected through use of reasonableness checks to avoid incorrect dates (i.e., an out-of-range date).

Verifying the Continuing Existence of Inventory

Information Systems staff periodically verifies the existence of certain components on the inventory through an annual verification. Information Systems technicians methodically go building by building looking for CPUs, monitors, printers, telephones, and certain portable devices. The asset tag is scanned and information such as assigned user is verified. Information gathered during the site visit is then uploaded to ISIS to reflect the fact that the equipment was physically verified. For portable equipment not found during a site visit and items at remote locations, Information Systems staff send an e-mail request asking the assigned party to report back with the identification number.

The Process Used to Create the Inventory

The City transitioned to ISIS in the summer of 2002. Problems with previous records meant that there was no information on items acquired prior to FY 95/96 when the transition was made.

Reporting Value of Assets on Financial Records

Maintaining a current inventory list is important as more than just a control function. Financial Services uses the information captured in ISIS as the source for valuation of computer assets on financial records. At year-end, an Excel spreadsheet is created from the information in ISIS. Equipment with a status code that indicates that it has been removed is identified and moved to a new worksheet to arrive at the deletions that need to be recorded on financial records. A similar process is used to identify equipment purchased in the current fiscal year.

OBJECTIVE, SCOPE, AND METHODOLOGY

The objectives of this audit were to determine whether:

1. Sufficient controls have been implemented to ensure compliance with AR 226.
2. Procedures established, by Information Systems departmental management, for compliance with AR 226 are being followed.
3. Controls are sufficient to ensure that equipment, no longer needed, is timely identified for disposal, properly sanitized of City information before released for surplus, and controlled until delivered to the Purchasing Division.

The scope of the work was limited to Information Systems departmental policies and practices enacted after the passage of AR 226, approved June 24, 2003, and effective as of July 1, 2003.

To complete the work, we reviewed Scottsdale Revised Code (City Code) and applicable ARs as well as the Purchasing and Procurement Card guidelines. We conducted interviews with the Information Systems General Manager, the Information Systems Departmental Advisor, the Information Systems Technical Manager, and the Information Systems Buyer. Staff in the Accounting Division of the Financial Services Department was also interviewed to gain an understanding of procedures for reporting capital asset valuations on financial records.

We reviewed files and documentation maintained by the Information Systems Buyer and staff at the Warehouse. We obtained a working copy of ISIS and computerized records listing work orders for audit testing. We also reviewed Procurement Card records to identify computer-related items purchased to verify that items were approved and inventoried, if applicable.

Audit work was conducted in accordance with generally accepted government audit standards as they relate to expanded scope auditing in a local government environment and as required by Article III, Scottsdale Revised Code, Section 2-117, *et seq*. Survey work began in January and audit testing was completed in February 2005 with Sonny Phillips conducting the work. Ramon Ramirez provided assistance with issues relating to financial records.

OBJECTIVE 1: Determine if sufficient controls have been implemented to ensure compliance with AR 226.

FINDING: Improvements are needed to provide assurance of compliance.

CRITERIA: Documented procedures should address all requirements.

CONDITION: Procedures have been developed to address approval of computer related assets but the information presented, as it relates to required approvals, is subject to interpretation. Information Systems staff has developed procedures for the ISIS database, inventory, deletions from the database, and a status code dictionary.

Policies and procedures for the creation of the inventory tags have not been documented and the computer used to generate the tags is not routinely backed up. There are compensating controls for the lack of backup as the Database Administrator has a copy of the software and a sample copy could be obtained from the vendor's web site.

Policies and procedures for updating the inventory during the completion of a work order have not been documented. Initially, we were told that Information Systems technicians are instructed to scan the asset when they complete a work order; in practice, however, this only occurs when the work order requires a corrective action to the device.

CAUSE: Corporate culture contributes to the practice of developing procedures but not committing them to a formal, written format.

EFFECT: Consistent understanding cannot be achieved when guidance is only provided through verbal instruction. When policies and procedures are not documented, the organization will loose the historical knowledge of procedures when staff leave.

RECOMMENDATIONS:

1. Clarify the language in existing ARs to ensure that requirements are consistent.
2. Document procedures for tagging computer related assets.
3. Clarify the instructions on when the inventory database will be updated as a result of the completion of a work order.

OBJECTIVE 2: Determine if procedures, established by Information Systems departmental management for compliance with AR 226, were being followed.

FINDING: Procedures, established for compliance with AR 226, are being followed.

CRITERIA: Supporting documentation should indicate that the piece of equipment was purchased at the direction of Information Systems staff or that the user department received Information Systems concurrence prior to the purchase. Purchases of equipment should be reflected on the inventory list and files should have sufficient documentation to evidence approval, the assignment of a barcode, and the work order for installing the equipment.

A physical inventory is to be completed annually by calendar year end. The composite valuation reported on financial statements should reflect the valuation listed on the inventory database.

CONDITION: From documentation retained by the Warehouse, we selected 31 delivery tickets with computer-related items (55 total pieces of equipment). We located the file maintained by the Information Systems Buyer and found a copy of each delivery ticket, evidence of approval, assignment of an asset tag, and installation. We then traced the items to the inventory database using the Purchase Order number as the tracking control and found all items that should have been on the database. We did note, however, in two instances that the Purchase Order number on the database did not match with actual purchase documentation.

We also reviewed purchases made between July 1, 2004, and January 31, 2005, with a City Procurement Card and found ten instances in which computer-related equipment and/or software was purchased. In eight instances, Information Systems concurrence was noted. In one instance, Communications and Public Affairs purchased a monitor but did not request Information Systems concurrence prior to the purchase. In another instance, staff at the Senior Center purchased software for “SeniorNet” but did not obtain Information Systems concurrence. We made inquiries about the nature of the purchases and found that certain informal agreements have been reached that allow some work areas to purchase computer-related equipment without Information Systems concurrence. This equipment is then received directly by the work area and does not become part of the inventory tracked by Information Systems. These agreements are in place for computers and equipment for “SeniorNet” at the Senior Centers, the Library, and Water Resources. According to Information Systems staff, if the work area requests to have a piece of equipment connected to the Network, the work area must agree to have the item transferred to Information Systems for inclusion on the inventory and the replacement schedule.

Information Systems management relies on the completion of work orders during the year to provide ongoing information about the status of equipment. To determine the reliability of this procedure for use in inventory verification, we obtained a work order report from Information Systems staff listing all work orders between July 1, 2004, and February 18, 2005. We selected a sample of 34 transactions then located the related asset tag on the ISIS database. Of the 34 work orders, only 13 or 38 percent ultimately reflected a change on the database. We conducted a second test by stratifying the sample to select work orders that appeared to actually require the technician to physically locate the equipment to complete the work. We then selected 52 work orders and found that 20 instances updated the ISIS asset inventory (38 percent).

Annually, Information Systems management initiates the physical inventory after completion of projects for equipment replacement. In 2004 the inventory officially began on November 29. We took the audit copy of the inventory database and eliminated purchases after the start of the inventory. We then sorted it by equipment type, status, and last activity date. The database reflected 10,717 pieces of equipment that should have been inventoried. As of February 4, 2005, 9,098 items (85 percent) had been inventoried. In addition, 199 computer assets were “inventoried” by sending an e-mail to the user department requesting verification that the item was still present.

Finally, we compared the composite valuation reported on financial records to the valuation reflected on the inventory database. We also verified the beginning balance on each of the Excel spreadsheets, the additions, deletions, and any adjustments used to arrive at the actual inventory reported to Financial Services. Ultimately, after several discussions with Information Systems management, we were able to reconcile the two values. The final resolution required consideration of $718,461 in negative adjustments and $11,286 worth of surplus assets, deleted from the valuation provided to Financial Services, but still reflected as in use on the database.

CAUSE: Procedures, if followed, are sufficient to ensure that network-related equipment will be recorded on the inventory database and inventoried annually. However, in practice, there is limited assurance that 1) all pieces listed on the inventory will be physically verified by an Information Systems representative and 2) that the inventory will be completed by calendar year end. The main causes for not inventorying all of the equipment are:

1. Problems with determining where the equipment is.
2. Reluctance to go to an employee's home to verify the status of the equipment.
3. Work assignments that require an employee to be in the field during the time that the inventory is complete.
4. Completion of a full, timely inventory is not a priority for Information Systems management.

Difficulties in reconciling the valuation listed on the financial records and the database can be attributed to the lack of written procedures for completing the valuation and the lack of an established process to correct the inventory database when discrepancies such as the surplus equipment are noted.

EFFECT: While procedures established by Information Systems management are sufficient to ensure that network related equipment will be reviewed for appropriateness prior to purchase, inventoried when received, and physically verified at least annually, there are failures in the control environment that result in the expenditure of City funds for computer related assets that are not included in the inventory database. As a result, the valuation of the equipment is not captured, the item is not tagged as City property in the same manner as other computer-related equipment, and there is no requirement for an annual inventory of this equipment.

Reporting the composite valuation to Financial Services for inclusion on financial reports is driven by the experience of the individual compiling the data. As a result, should this individual leave the organization it would be difficult to recreate the information.

RECOMMENDATIONS:

1. Require all computer related equipment, purchased with City funds or on behalf of the City, to be reviewed for concurrence, inventoried by Information Systems staff, and included on the inventory database for annual verification.
2. Enforce the requirement to scan equipment when a work order is completed to update the inventory location and other information that will help complete the physical inventory.

3. Establish a strict timeline for the physical inventory to be completed.
4. Cease the practice of using e-mail to verify the ongoing existence of equipment. For areas such as the Police Department, develop procedures that allow Police technicians to scan the equipment on behalf of Information Systems.
5. Ensure that written procedures for compiling the composite valuation for the financial records, developed prior to the completion of the audit, are kept current and that all needed adjustments are reflected on the inventory database.

OBJECTIVE 3: Determine if controls are sufficient to ensure that equipment, no longer needed, is timely identified for disposal, properly sanitized of City information before released for surplus, and controlled until delivered to the Purchasing Division.

FINDING: Controls are sufficient to ensure that equipment, no longer needed, is timely identified for disposal, properly sanitized prior to release, and controlled until delivery to the Purchasing Division for disposal. Procedures are not in place to allow reconciliation between records maintained by Information Systems staff and the record of sale generated by the Purchasing Division.

CRITERIA: A sufficient control environment would include established, documented policies and procedures setting out the disposal process including the authority to declare computer-related equipment to be surplus, the process to prepare the equipment for disposal, and the steps to safeguard the equipment until released to the Purchasing Division for disposal. Adequate procedures would include:

- A means to track the equipment from the point the item was accepted by Information Systems and declared surplus to the delivery to the Purchasing Division.
- The steps to take to remove any data (software, files, etc.) prior to release for disposal.
- Instructions for the removal of asset tags and the retention of those tags.
- Requirements for the inventory database to be updated with the correct status of the equipment.

CONDITION: Written guidelines have been developed for the service life of information systems assets. Exceptions are allowed but justification must be documented.

When an item is identified as no longer needed, the piece of equipment is brought back to Information Systems and the inventory database is updated to record the new location. Computer technicians erase information from the device, if necessary. The asset tag is then removed and forwarded to the Information Systems Departmental Advisor and the database is updated to reflect “SURPLUS.” The equipment is then placed in a cage. When the volume of surplus items is sufficient to warrant disposal, Information Systems staff notifies Purchasing Division staff of the type of assets available and the quantities for each type. Information Systems and Purchasing staff count the items in the cage and locks are placed on the door to prevent removal or addition of items.

Purchasing staff develop an “Offer to Purchase” to generate a request for bids. The equipment is then sold to the individual who places the highest offer. Once an award is made, the purchaser has seven days to pick up the equipment. A bill of sale is provided at that time. The Warehouse Manager retains copies of all of the documentation.

We attempted to reconcile information related to the sale of the equipment back to records maintained by Information Systems staff. While we could come close to reconciling the number of items sold, we could not trace an individual item on the Information Systems records to a particular sale transaction.

CAUSE: Information Systems and Warehouse staff agrees to the count of items placed in the cage for disposal when a decision is reached that a sufficient quantity is on hand for sale. At that time, the cage is locked and Information Systems staff no longer has access to add items but Purchasing Division staff may continue to add items declared surplus by other departments. When equipment is added, Purchasing Division staff does not list the new item on the record of the count verified by Information Systems and Warehouse staff.

The Offer to Purchase only lists the count of items by type (i.e., 432 CPU computers) and there is no supporting documentation that would allow the equipment listed to be traced back to the inventory database.

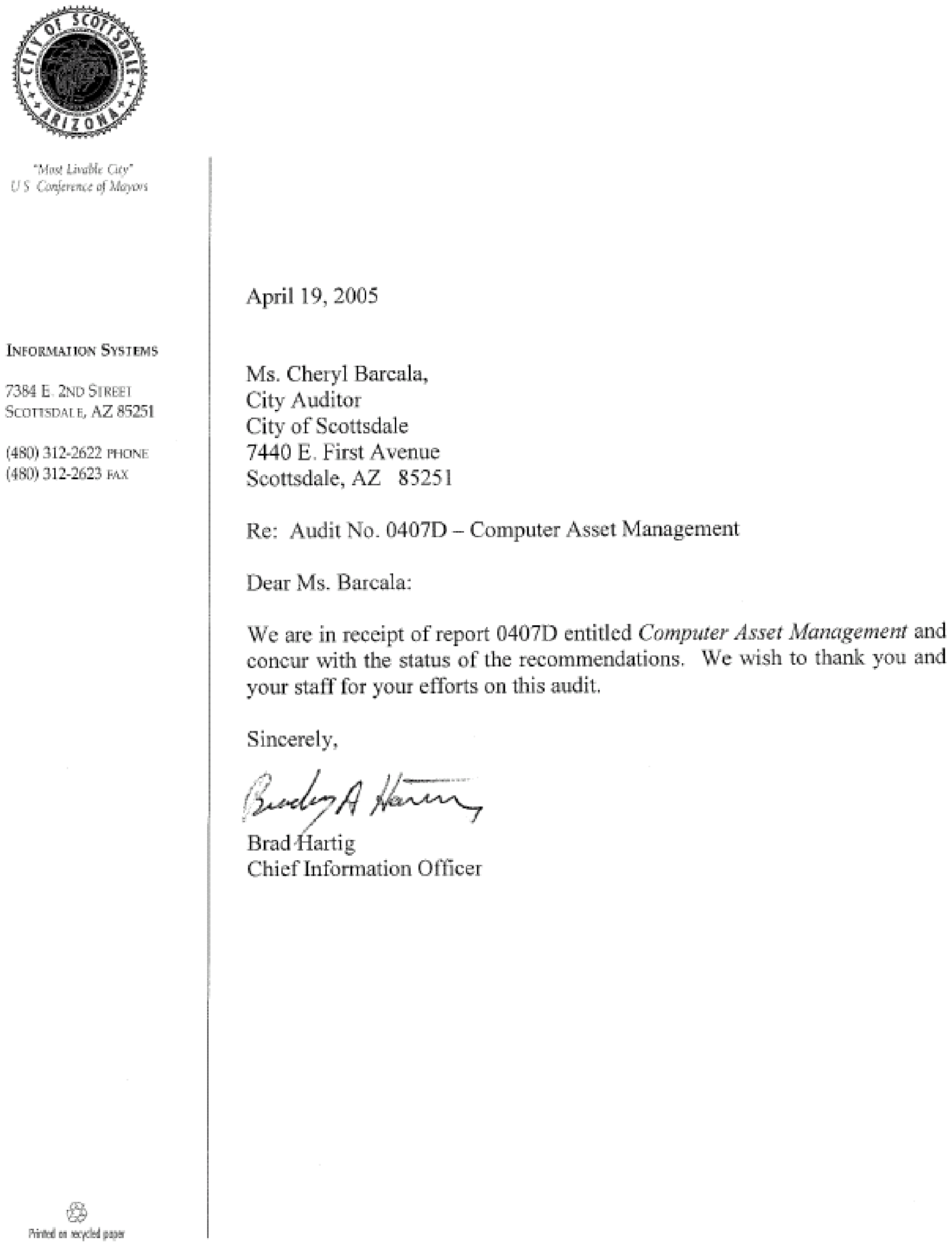
EFFECT: There is a limited risk that an item identified by Information Systems staff for surplus may not actually be disposed of by sale. If the Purchasing Division inadvertently accepts an item for surplus from a department without verifying whether the item is a listed asset, an inventoried piece of equipment may be disposed of without removing the item from inventory.

RECOMMENDATIONS:

1. Maintain a control list of assets, by identifying serial number, for items placed in the cage for disposal. Reconcile the count on this list to the count in the cage when determining the number of items to be disposed of.
2. Require Purchasing Division staff, when adding items to the cage, to add the item to the control list, by identifying serial number and submitting area, to retain a complete record of what was sold. Provide this updated control list to Information Systems staff for retention and use, if necessary, when searching for missing equipment.

APPENDIX A

MANAGEMENT RESPONSE



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U.S. Conference of Mayors

INFORMATION SYSTEMS

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April 19, 2005

Ms. Cheryl Barcala,
City Auditor
City of Scottsdale
7440 E. First Avenue
Scottsdale, AZ 85251

Re: Audit No. 0407D – Computer Asset Management

Dear Ms. Barcala:

We are in receipt of report 0407D entitled *Computer Asset Management* and concur with the status of the recommendations. We wish to thank you and your staff for your efforts on this audit.

Sincerely,

Brad Hartig
Chief Information Officer

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